

## **An Electronic Quality Management Bookshelf**

Richard Adelson, VA Minneapolis Regional Medical Education Center, Minneapolis, MN;  
Jo MacDonald, VA Quality Management Institute, Durham, NC; Betty Coyle-Friedman,  
ConQuest Software, Columbia, MD; Ginny Dupont, VA Library Service, Washington, DC.

This program demonstrates an innovative project designed to provide health care organization staff with an electronic bookshelf of quality improvement related materials and use of a search engine that permits rapid identification and access to relevant information.

The virtual explosion of information on quality improvement precipitated our interest in providing quality managers and clinical staff with ready access to information found in multiple text references. This would facilitate their ability to develop and validate clinical pathways, protocols of care, and practice guidelines as well as perform other quality assurance activities. Given hardware and software available to VA quality managers, the program was designed to run a CD-ROM disc in a Windows environment. We chose to use the National Library of Medicine (NLM) UMLS which includes not only MeSH (Medical Subject Headings), but also vocabularies such as SNOWMED and CPT.

A unique aspect of this project is the search engine we selected. ConQuest Software was selected over other text searching strategies because of its ease of use and the power to retrieve relevant information using natural language processing techniques. ConQuest provided capabilities to perform idiom processing; generate a search in response to questions in plain English; enhance and tune both recall and precision of the search; perform linguistic analytic expansion (the ability to select the meanings of a single word and then expand it to related words and concepts), incorporate extensive dictionaries and thesauri including the NLM Metathesaurus.

The reference documents included in the prototype database were identified through a survey of VA quality managers and reviewed by a steering committee consisting of headquarters and field representatives of quality management, education, library, and information management. The Metathesaurus is being used for the project under the terms of an experimental licensing agreement with the NLM.

The database incorporates 10 text references comprising publicly available and VA documents. The database includes such references as all currently published AHCPR Guidelines, Healthy People 2000, CDC Clinical Prevention Guidelines, Clinical Pathways, VA's Clinical Indicator Workbook, and VA Policies, Regulations, Circulars and Information Letters.

Providing reference texts in electronic format enables users to search the entire database for the needed information or just on selected text references. The search engine flags relevant "hits" and ranks the source documents in which they are found based on the degree of fit with the search term(s). Users, by having this information in electronic form, can readily print selected sections or download the data to a word processor.

To improve the speed of data retrieval, ConQuest developed a dedicated engine designed to optimize performance in the CD-ROM environment and use the range of ConQuest query options. ConQuest also improves search productivity by enabling users to target their queries thereby retrieving relevant information and reducing false hits.

The bookshelf was also designed so that materials can be updated and expanded to include information databases in text, numerical, and image formats. We recognized that such content is not static, but dynamic and fluid, requiring an on-going update process. This database's value lies in its strengths as a reference tool rather than in providing clinicians or quality managers with real time data. This prototype disc is the initial project using this technology and was evaluated for user satisfaction, frequency of use, ease of use, and the appropriateness of reference material.

This project was developed as a collaborative effort of the VA's Minneapolis Regional Medical Education Center, the Quality Management Institute, the Office of Academic Affairs Library Service, the Office of Quality Management, and the Medical Information Resources Management Office.